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NEWS EXPRESS NOVEMBER 18 CURRENT VERSION FOR WINDOWS IS V8.01,  
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FILE LAST UPDATED: 30 Nov 2005 (20051130/ED)

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=> deuterium (l) exchange  
85155 DEUTERIUM  
142 DEUTERIUMS  
85222 DEUTERIUM  
(DEUTERIUM OR DEUTERIUMS)  
544180 EXCHANGE  
16396 EXCHANGES  
551967 EXCHANGE  
(EXCHANGE OR EXCHANGES)  
L1 9953 DEUTERIUM (L) EXCHANGE

=> palladium or Pd  
153121 PALLADIUM  
37 PALLADIUMS  
153124 PALLADIUM  
(PALLADIUM OR PALLADIUMS)  
180134 PD  
2199 PDS  
181938 PD  
(PD OR PDS)  
L2 239348 PALLADIUM OR PD

=> l1 and l2  
L3 498 L1 AND L2

=> sealed tube  
92805 SEALED  
305410 TUBE  
179303 TUBES  
413883 TUBE  
(TUBE OR TUBES)  
L4 16857 SEALED TUBE  
(SEALED(W) TUBE)

=> l3 and l4  
L5 6 L3 AND L4

=> d l5 1-6 ti

L5 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN.  
TI Kinetics of deuteration of pyrazole

L5 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI Selective poisoning of palladium-catalyzed hydrogen-exchange reactions

L5 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI The chemistry of the natural order cupressales. XL. The structure of thujopsene and hinokiic acid

L5 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI Cyclic acylals

L5 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI A new synthesis of 2-phosphoryl-D-glyceric acid

L5 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI Synthesis of organic deuterium compounds. I. Deutero-polymethylene

=> d 15 6 ti fbib abs

L5 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI Synthesis of organic deuterium compounds. I. Deutero-polymethylene

AN 1951:13733 CAPLUS

DN 45:13733

OREF 45:2415d-i

TI Synthesis of organic deuterium compounds. I. Deutero-polymethylene

AU Leitch, Leonard C.; Gagnon, Paul E.; Cambron, Adrien

CS Natl. Research Labs., Ottawa

SO Can. J. Research (1950), 28B, 256-63

DT Journal

LA English

AB The preparation of (CH<sub>2</sub>)<sub>n</sub> (I), (MeCH)<sub>n</sub> (II), and (CD<sub>2</sub>)<sub>n</sub> (III) is described, and infrared absorption spectra are shown for I and III. Zn dust (6 g.) was added to a stirred solution of 25 g. CuSO<sub>4</sub>.5H<sub>2</sub>O in 250 ml. H<sub>2</sub>O, the mixture stirred 1 hr., the precipitated Cu allowed to settle, the supernatant liquid decanted, and the residue washed with H<sub>2</sub>O, MeOH, and Et<sub>2</sub>O; CH<sub>2</sub>N<sub>2</sub> prepared from 30 g. MeN(NO)CONH<sub>2</sub> was added over a period of 2 hrs. to a suspension of the precipitated Cu (IV) in a little Et<sub>2</sub>O, the mixture allowed to stand 1 day, the ether solution decanted and discarded, the residue digested on the steam bath for several hrs. with 40 ml. 25% HNO<sub>3</sub>, and the white flocculent amorphous precipitate filtered, washed with hot H<sub>2</sub>O and then EtOH-H<sub>2</sub>O (1:1), giving 0.7-0.8 g. I, m. 127-8°; a Cu-Ag alloy, Raney Ni, Naturkupfer C, and precipitated Ag were less satisfactory than IV as catalysts in the polymerization. A solution of MeCHN<sub>2</sub>, prepared in 50% yield by the rapid addition of 30 g. EtN(NO)CONH<sub>2</sub> to a stirred mixture of 300 ml. Et<sub>2</sub>O and 90 ml. 50% KOH at -15°, added dropwise to a suspension of IV in Et<sub>2</sub>O gave 33% II, m. 94-6°. MeNO<sub>2</sub> (25 ml.) and 25 ml. 0.02 M NaOD in D<sub>2</sub>O heated 24 hrs. at 110° in a sealed tube placed in a rocker type of shaker, cooled, and the lower layer dried over P<sub>2</sub>O<sub>5</sub> and distilled gave 22.0 g. CD<sub>3</sub>NO<sub>2</sub>, d<sub>250</sub> 1.1672; 2 more exchanges with D<sub>2</sub>O gave 17 g. (59%) CD<sub>3</sub>NO<sub>2</sub> (V), d<sub>250</sub> 1.1832, practically free from H. DCl (VI) was generated from BzCl and D<sub>2</sub>O and absorbed in a known weight of D<sub>2</sub>O; a mixture of 6 g. V and D<sub>2</sub>O (containing sufficient VI to neutralize the CD<sub>3</sub>NH<sub>2</sub> formed) treated with D<sub>2</sub> under 3 atmospheric in the presence of 0.4 g. Pd-C, filtered under pressure through a porous glass disk, and evaporated to dryness in vacuo gave 5.9 g. (90%) CD<sub>3</sub>ND<sub>2</sub>.DCl, which on crystallization from BuOH m. 227-8°; the BuOH contained appreciable amts. of BuOD formed by the exchange reaction CD<sub>3</sub>ND<sub>2</sub>.DCl + 3BuOH → CD<sub>3</sub>NH<sub>2</sub>.HCl + 3BuOD. CD<sub>3</sub>NH<sub>2</sub>.HCl (23 g.), 130 ml. H<sub>2</sub>O, and 18.4 g. KCNO boiled gently for 15 min., and the CD<sub>3</sub>NHCONH<sub>2</sub> thus obtained added slowly to a stirred solution of 23 g. H<sub>2</sub>SO<sub>4</sub> in 150 ml. H<sub>2</sub>O maintained at 0° gave 23 g. (60%) CD<sub>3</sub>N(NO)CONH<sub>2</sub> (VII). CD<sub>2</sub>N<sub>2</sub> (3 g.), prepared either from VII and NaOD in D<sub>2</sub>O (5 g. Na in 30 ml. D<sub>2</sub>O) or from CH<sub>2</sub>N<sub>2</sub> and D<sub>2</sub>O, with an equal weight of IV

gave 0.53 g. (53%) III, m. 122-3°; analytical data indicated the presence of residual H in III.

=> 11(1)12

L6 271 L1(L)L2

=> benzyl?

L7 293503 BENZYL?

=> 16 (1)17

L8 8 L6 (L)L7

=> d l8 1-8 ti

L8 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI Efficient deuterium labeling method of biologically active compounds

L8 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI Isotope Effects and the Nature of Stereo- and Regioselectivity in Hydroaminations of Vinylarenes Catalyzed by Palladium(II)-Diphosphine Complexes

L8 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI On the mechanism of the cyclopalladation reaction of benzyl-benzylidene-amine with palladium(II) acetate in acetic acid

L8 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI Pd/C-H<sub>2</sub>-catalyzed deuterium exchange reaction of the benzylic site in D<sub>2</sub>O

L8 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI Deuteration of estrogens using Pd/C as a catalyst

L8 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI Palladium-catalyzed transfer hydrogenolysis of benzyl acetate with ammonium formate

L8 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI Heterogeneous catalytic isotopic exchange of benzylic compounds in solution

L8 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI A selective method for deuterium exchange in hydroaromatic compounds

=> d l8 1-8 ti fbib abs

L8 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI Efficient deuterium labeling method of biologically active compounds

AN 2005:739643 CAPLUS

TI Efficient deuterium labeling method of biologically active compounds

AU Esaki, Hiroyoshi; Aoki, Fumiyo; Maegawa, Tomohiro; Sajiki, Hironao; Hirota, Kosaku

CS Department of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan

SO Abstracts of Papers, 230th ACS National Meeting, Washington, DC, United States, Aug. 28-Sept. 1, 2005 (2005), MEDI-129 Publisher: American Chemical Society, Washington, D. C.

CODEN: 69HFCL

DT Conference; Meeting Abstract; (computer optical disk)

LA English

AB There is an increasing demand for the synthesis of deuterium-labeled compds. used in studies a better understanding of the drug metabolism and of higher-order structure of biomols., and so on. While the various

procedures toward **deuterium**-labeled compds. have been reported, post-synthetic **deuterium exchange** reaction of the unlabeled compds. by a catalytic method is prominent for its applicability. We have shown that hydrogen atoms on **benzylic** carbons are effectively **exchange** into **deuterium** atoms using Pd/C in the presence of a catalytic amount of hydrogen gas in D<sub>2</sub>O at room temperature. Furthermore, the application of heat could promote the catalyst activity of the Pd/C-H<sub>2</sub>-D<sub>2</sub>O system and lead to a H-D **exchange** reaction even on non-activated carbons. Multi-deuterated products using a wide range of unlabeled starting materials including biol. active compds. such as pharmaceuticals and nucleosides can be easily prepared by application of these systems.

L8 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Isotope Effects and the Nature of Stereo- and Regioselectivity in Hydroaminations of Vinylarenes Catalyzed by Palladium(II)-Diphosphine Complexes  
 AN 2004:498212 CAPLUS  
 DN 141:190429  
 TI Isotope Effects and the Nature of Stereo- and Regioselectivity in Hydroaminations of Vinylarenes Catalyzed by Palladium(II)-Diphosphine Complexes  
 AU Vo, Loan K.; Singleton, Daniel A.  
 CS Department of Chemistry, Texas A&M University, College Station, TX, 77842, USA  
 SO Organic Letters (2004), 6(14), 2469-2472  
 CODEN: ORLEF7; ISSN: 1523-7060  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB The hydroamination of styrene with aniline catalyzed by phosphine-ligated **palladium** triflates exhibits a substantial <sup>13</sup>C isotope effect at the **benzylic** carbon. This supports rate-determining nucleophilic attack of amine on a η<sup>3</sup>-phenethyl **palladium** complex. **Deuterium exchange** observations and predicted isotope effects based on DFT calcns. support this mechanism. Selectivity in these reactions is determined by the facility of **palladium** displacement after reversible hydropalladation of the alkene.  
 RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI On the mechanism of the cyclopalladation reaction of benzyl-benzylidene-amine with palladium(II) acetate in acetic acid  
 AN 2003:91339 CAPLUS  
 DN 139:53135  
 TI On the mechanism of the cyclopalladation reaction of benzyl-benzylidene-amine with palladium(II) acetate in acetic acid  
 AU Albert, Joan; Granell, Jaume; Tavera, Raquel  
 CS Departament de Química Inorgànica, Universitat de Barcelona, Barcelona, 08028, Spain  
 SO Journal of Organometallic Chemistry (2003), 667(1-2), 192-196  
 CODEN: JORCAI; ISSN: 0022-328X  
 PB Elsevier Science B.V.  
 DT Journal  
 LA English  
 OS CASREACT 139:53135  
 AB The reaction of benzyl-benzylidene-amine C<sub>6</sub>H<sub>5</sub>CH:NCH<sub>2</sub>C<sub>6</sub>H<sub>5</sub> (1) and Pd(OAc)<sub>2</sub> in a 1:1 molar ratio in CH<sub>3</sub>CO<sub>2</sub>D at 60° (reaction b) produced D-enriched cyclopalladated compds. of formula (μ-OAc)<sub>2</sub>[Pd{C<sub>6</sub>H<sub>4</sub>CH:NCH<sub>2</sub>-2,6-(H<sub>1</sub>-xD<sub>x</sub>)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>}]<sub>2</sub> (2d), whose D atoms were located at the ortho positions of the benzyl groups and whose D content slowly increased with the time of reaction b. Treatment of the cyclopalladated compound of formula (μ-OAc)<sub>2</sub>[Pd(C<sub>6</sub>H<sub>4</sub>CH:NCH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>)]<sub>2</sub> (2) in CH<sub>3</sub>CO<sub>2</sub>D at 60° for 24 h, led to compound 2d with a D content [expressed as percentage of

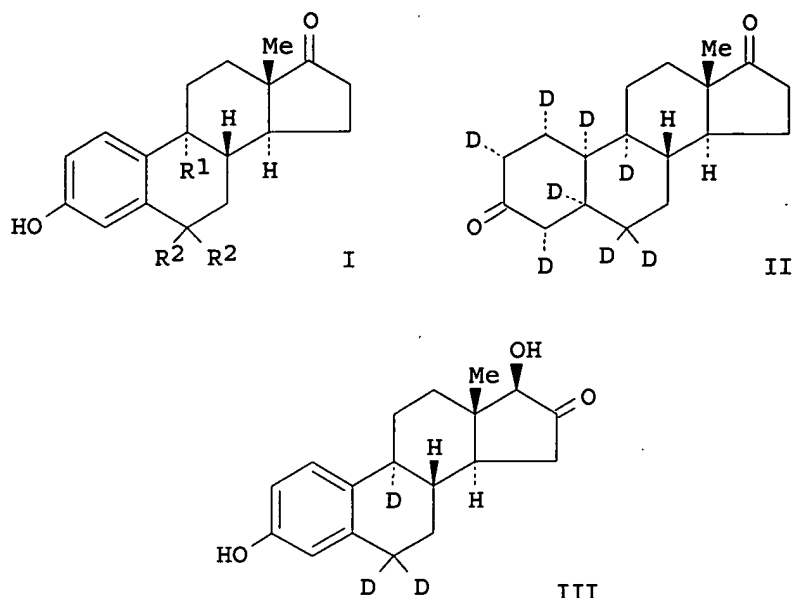
occupation by D atoms of the ortho positions of its benzyl groups] of .apprx.10%. However, reaction b after 24 h of reaction yielded a compound 2d with a D content of .apprx.40%. The solution formed, when 1 and Pd(OAc)<sub>2</sub> in a 1:1 molar ratio were dissolved in a solution of CDCl<sub>3</sub> in perdeuterated HOAc in a 1:2 volume ratio, contained as major compds. benzaldehyde, C<sub>6</sub>H<sub>5</sub>CH<sub>2</sub>ND<sub>2</sub> and Pd(OAc-d<sub>3</sub>)<sub>2</sub> a few minutes after its formation. However, after 2 wk at room temperature, its major compds. were benzaldehyde and the cyclopalladated compds. (μ-OAc-d<sub>3</sub>)<sub>2</sub>[Pd(C<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>ND<sub>2</sub>)]<sub>2</sub> and (μ-OAc-d<sub>3</sub>)<sub>2</sub>[Pd(C<sub>6</sub>H<sub>4</sub>CH:NCH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>)]<sub>2</sub>. These results led to the proposal of a set of reactions that produced 2, when 1 and Pd(OAc)<sub>2</sub> reacted in HOAc.

RE.CNT 9        THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
                 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8    ANSWER 4 OF 8    CAPLUS    COPYRIGHT 2005 ACS on STN  
TI    Pd/C-H<sub>2</sub>-catalyzed deuterium exchange  
      reaction of the benzylic site in D<sub>2</sub>O  
AN    2002:526646    CAPLUS  
DN    137:384626  
TI    Pd/C-H<sub>2</sub>-catalyzed deuterium exchange  
      reaction of the benzylic site in D<sub>2</sub>O  
AU    Sajiki, Hironao; Hattori, Kazuyuki; Aoki, Fumiyo; Yasunaga, Kanoko;  
      Hirota, Kosaku  
CS    Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu,  
      502-8585, Japan  
SO    Synlett (2002), (7), 1149-1151  
      CODEN: SYNLES; ISSN: 0936-5214  
PB    Georg Thieme Verlag  
DT    Journal  
LA    English  
OS    CASREACT 137:384626  
AB    Pd/C is found to catalyze efficient and chemoselective  
      exchange of deuterium derived from D<sub>2</sub>O with hydrogens on  
      a benzylic carbon in the presence of a catalytic amount of  
      hydrogen at room temperature

RE.CNT 32        THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
                 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8    ANSWER 5 OF 8    CAPLUS    COPYRIGHT 2005 ACS on STN  
TI    Deuteration of estrogens using Pd/C as a catalyst  
AN    2000:550049    CAPLUS  
DN    133:322037  
TI    Deuteration of estrogens using Pd/C as a catalyst  
AU    Kiuru, Paula; Wahala, Kristiina  
CS    Department of Chemistry, Organic Chemistry Laboratory, University of  
      Helsinki, FIN-00014, Finland  
SO    Synthesis and Applications of Isotopically Labelled Compounds 1997,  
      Proceedings of the International Symposium, 6th, Philadelphia, PA, United  
      States, Sept. 14-18, 1997 (1998), Meeting Date 1997, 475-477. Editor(s):  
      Heys, J. Richard; Melillo, David G. Publisher: John Wiley & Sons Ltd.,  
      Chichester, UK.  
      CODEN: 69AGFQ  
DT    Conference  
LA    English  
GI



AB The reduction of estrone (I; R1 = R2 = H) using D2 on Pd/C gives 1 $\alpha$ ,2 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6,6,9 $\alpha$ ,10 $\alpha$ -[2H3]estrane-3,17-dione (II), the configuration of **deuteriums** been established by NMR. Pd/C catalyzes the H-D **exchange** also at the **benzylic** positions of estrogens. 6,6,9-[2H3]estrone (I; R1 = R2 = D) and 6,6,9-[2H3]-16-ketoestradiol (III) were synthesized in high isotopic purity.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN

TI Palladium-catalyzed transfer hydrogenolysis of benzyl acetate with ammonium formate

AN 1997:177475 CAPLUS

DN 126:305344

TI Palladium-catalyzed transfer hydrogenolysis of benzyl acetate with ammonium formate

AU Rajagopal, S.; Spatola, A. F.

CS Department of Chemistry, University of Louisville, Louisville KY 40292, USA

SO Applied Catalysis, A: General (1997), 152(1), 69-81

CODEN: ACAGE4; ISSN: 0926-860X

PB Elsevier

DT Journal

LA English

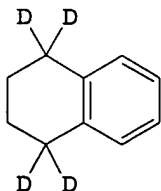
AB Transfer hydrogenolysis of benzyl acetate, a model reaction for C-O hydrogenolysis, was achieved by ammonium formate and Pd/C at 20°C. Hydrogen-donating abilities of various formate salts were found to depend on the counter-ion: K<sup>+</sup> > NH<sub>4</sub><sup>+</sup> > Na<sup>+</sup> > NH<sub>4</sub>Et<sup>3+</sup> > Li<sup>+</sup> > H<sup>+</sup>. Kinetic studies using HCOONH<sub>4</sub> revealed that the rate of transfer hydrogenolysis was independent of the substrate (benzyl acetate) concentration. First order dependence was exhibited by both hydrogen donor (HCOONH<sub>4</sub>) and the catalyst (10 Pd/C). The initial reaction rate dropped from 46.9+10<sup>-3</sup>molL<sup>-1</sup>min<sup>-1</sup> to 26.8+10<sup>-3</sup>molL<sup>-1</sup>min<sup>-1</sup> when HCOONH<sub>4</sub> was replaced with DCOOND<sub>4</sub> giving a calculated primary kinetic isotope effect of 1.75. From the kinetic and isotope effect data, a mechanism has been proposed involving abstraction of formyl hydrogen by the catalyst as the rate-limiting step. The rate law derived was R = k' [HCOONH<sub>4</sub>] [Pd/C]. Hydrogen isotope labeling studies using DCOOND<sub>4</sub> as hydrogen donor disclosed that the expected mono-deuterated toluene (C<sub>6</sub>H<sub>5</sub>CH<sub>2</sub>D) was not formed exclusively.

Instead, a mixture of deuterated toluenes (C<sub>6</sub>H<sub>5</sub>CH<sub>x</sub>D<sub>3-x</sub>) was obtained, demonstrating that benzylic hydrogens are highly labile on the catalyst surface and exchange with the solvent.

RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Heterogeneous catalytic isotopic exchange of benzylic compounds in solution  
AN 1994:579037 CAPLUS  
DN 121:179037  
TI Heterogeneous catalytic isotopic exchange of benzylic compounds in solution  
AU Azran, Jacques; Shimoni, Michael; Buchman, Ouri  
CS Radiochemistry Dep., Nuclear Research Centre-Negev, Beer-Sheva, 84190, Israel  
SO Journal of Catalysis (1994), 148(2), 648-53  
CODEN: JCTLA5; ISSN: 0021-9517  
DT Journal  
LA English  
AB Isotopic **exchange** reactions of bibenzyl and **benzylic** derivs. with **deuterium** (D<sub>2</sub>) and tritium (T<sub>2</sub>) gas, catalyzed by Pd/C, have been performed in solution Catalyst pre-washed with the reacting gas showed improved H/D or H/T **exchange**. In aprotic solvents such as dioxane, Et acetate, and cyclohexane, 3.1 to 3.5 D atoms were exchanged under standard conditions in 1 h, while in benzene 1 D atom was exchanged. D atoms adsorbed on the catalyst surface were rapidly replaced by H from methanol, diluting the D<sub>2</sub> gas phase. Compds. containing O or N atoms enhanced the rate of **exchange**, while S atoms inhibited the catalyst activity. The H/D **exchange** obeyed pseudo-first-order kinetics when D<sub>2</sub> gas was used in large excess. When T<sub>2</sub> gas replaced D<sub>2</sub>, a substantial decrease in the rate of **exchange** was observed due to the slower dissociative chemisorption of T<sub>2</sub> on the catalyst surface. The results indicated that this **exchange** process occurred through two simultaneous mechanisms. The breaking of the C-H bond appeared to be the rate-determining step.

L8 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
TI A selective method for deuterium exchange in hydroaromatic compounds  
AN 1987:66870 CAPLUS  
DN 106:66870  
TI A selective method for deuterium exchange in hydroaromatic compounds  
AU Ofosu-Asante, K.; Stock, L. M.  
CS Dep. Chem., Univ. Chicago, Chicago, IL, 60637, USA  
SO Journal of Organic Chemistry (1986), 51(26), 5452-4  
CODEN: JOCEAH; ISSN: 0022-3263  
DT Journal  
LA English  
OS CASREACT 106:66870  
GI



AB Deuteration of benzyl and hydroarom. compds. with palladium catalyst under D<sub>2</sub> in AcOD gave products that were selectively deuterated in the benzylic positions. Thus, PhCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Ph and 5,6,7,8-tetrahydronaphthalene were



deuterated in AcOD under D2 over Pd/C to give 74% PhCD2CH2CD2Ph and 90% the tetradeuteronaphthalene I, resp. Other compds. examined in this exchange deuteration procedure included PhCH2CH2Ph, Ph3CH, Ph2CH2, 9,10-dihydroanthracene, 9,10-dihydrophenanthrene, and 5,6,7,8-tetrahydro-1-naphthalenecarboxylic acid. Yields ranged from 70-95%.

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=> l8 and l9

L10 0 L8 AND L9

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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
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FILE 'CAPLUS' ENTERED AT 10:31:24 ON 01 DEC 2005  
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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	50.20	50.41
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-6.57	-6.57

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L1 9953 DEUTERIUM (L) EXCHANGE  
L2 239348 PALLADIUM OR PD  
L3 498 L1 AND L2  
L4 16857 SEALED TUBE  
L5 6 L3 AND L4  
L6 271 L1(L)L2  
L7 293503 BENZYL?  
L8 8 L6 (L)L7  
L9 92805 SEALED  
L10 0 L8 AND L9

=> isotope (1) exchange

222532 ISOTOPE  
 103418 ISOTOPES  
 268565 ISOTOPE  
     (ISOTOPE OR ISOTOPES)  
 544180 EXCHANGE  
     16396 EXCHANGES  
 551967 EXCHANGE  
     (EXCHANGE OR EXCHANGES)

L11 16642 ISOTOPE (L) EXCHANGE

=> l2 and l11

L12 446 L2 AND L11

=> deuterium

85155 DEUTERIUM  
     142 DEUTERIUMS

L13 85222 DEUTERIUM  
     (DEUTERIUM OR DEUTERIUMS)

=> l12 and l13

L14 158 L12 AND L13

=> l9 and l14

L15 1 L9 AND L14

=> d l15 ti fbib abs

L15 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

TI Deuterium-hydrogen exchange reaction catalysts

AN 1978:467316 CAPLUS

DN 89:67316

TI Deuterium-hydrogen exchange reaction catalysts

IN Kiyoura, Tadimitsu

PA Mitsui Toatsu Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53012792	A2	19780204	JP 1976-87149	19760723
	JP 58048216	B4	19831027		
				JP 1976-87149	A 19760723

AB Metallic catalysts (Pt, Pd, Rh, Ru, and Re) supported by a fluorinated carbon support or an inert catalytic support coated with fluorinated carbon are useful for D-H exchange reactions between water and H gas. Thus, a Pt catalyst supported by fluorinated graphite (C/F atomic ratio 1:1; 0.5 weight% Pt) was prepared, then the catalyst (50 mg) and water whose D concentration was 0.15 atomic% were sealed in a container (50 mL volume) under 1 atm H, and the container was shaken vigorously (at 28° for 10 min) to give an exchange factor of 95% vs. 60% for a Pt catalyst supported by activated carbon.

=> parr

3735 PARR  
     19 PARRS

L16 3743 PARR  
     (PARR OR PARRS)

=> l14 and l16

L17 0 L14 AND L16

=> l11(l)L12

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH  
FIELD CODE - 'AND' OPERATOR ASSUMED 'L11(L)L12'  
L18 446 L11(L)L12

=> L2(L)L11  
L19 346 L2(L)L11

=> L13(L)L19  
L20 42 L13(L)L19

=> D L20 32-42 TI

L20 ANSWER 32 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Homogeneous oxidation of 1-octene by dioxygen or tert-butyl hydroperoxide catalyzed by rhodium(III) or palladium(II) species. Studies with oxygen-18 and 1-octene-2-d2

L20 ANSWER 33 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Real-time experimental measurements of isotopic exchange between gaseous hydrogen and palladium hydride powder

L20 ANSWER 34 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Mechanism of lactose translocation in proteoliposomes reconstituted with lac carrier protein purified from Escherichia coli. II. Deuterium solvent isotope effects

L20 ANSWER 35 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Electrolytic hydrogen isotope separation factors and efficiency of exchange between deuterated water and hydrogen (protium) at palladium electrodes

L20 ANSWER 36 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Deuterium- and tritium-labeled thiomalonic S-esters

L20 ANSWER 37 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Hydrogen-water deuterium exchange over unsupported Group VIII noble metals

L20 ANSWER 38 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Glutathione-catalyzed hydrogen isotope exchange at position 5 of uridine. Model for enzymic carbon alkylation reactions of pyrimidines

L20 ANSWER 39 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Isotopic exchange reactions involving alcohols, ketones, and deuterium on silica, on palladium/silica, and on alumina

L20 ANSWER 40 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Mechanism for exchange between aqueous solutions and deuterium gas on palladium surfaces

L20 ANSWER 41 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI The mechanism for the isotopic exchange between deuterium and acidic solutions on palladium surfaces

L20 ANSWER 42 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Differences in the catalytic activities of nickel, platinum, and **palladium** as observed in the **isotope-exchange** reaction of p-xylene with **deuterium** oxide

=> D L20 42 TI FBIB ABS

L20 ANSWER 42 OF 42 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Differences in the catalytic activities of nickel, platinum, and **palladium** as observed in the **isotope-exchange** reaction of p-xylene with **deuterium** oxide

AN 1962:407874 CAPLUS

DN 57:7874

OREF 57:1602f-i

TI Differences in the catalytic activities of nickel, platinum, and palladium as observed in the isotope-exchange reaction of p-xylene with deuterium oxide

AU Hirota, Kozo; Ueda, Tomiko

CS Univ. Osaka

SO Bulletin of the Chemical Society of Japan (1962), 35, 228-32

CODEN: BCSJA8; ISSN: 0009-2673

DT Journal

LA Unavailable

AB The difference in the catalytic activity of Pt and Ni on p-xylene, the activity of Pd, and the effects of carriers on the activity of catalysts are reported. D2O (99.7%) is used as obtained along with Ni-kieselguhr. Tech. p-xylene is shaken with Hg to remove S compds. and recrystd. five times to sep. it from o- and m-xylene. The purified p-xylene is dried over Na and distilled into a storage vessel. Ni-Al2O3 and Ni-SiO2 are prepared by decomposing Ni formate supported on Al3O3 and SiO2 at 270°. The Ni formate-Al2O3 is prepared by adding 80% HCOOH to a NiCO3 suspension containing suspended Al2O2, and Me2CO is added to the solution to complete the precipitation of

Ni formate. Com. activated  $\gamma$ -Al2O3 and pure Al2O3 from the dehydration of alumina gel are used. Ni formate-SiO2 is prepared in the same manner by the use of com. silica gel. Pt black is prepared by the reduction of H2PtCl6 with HCHO and KOH. The catalyst under test is prepared in a reaction tube and the p-xylene and D2O are charged by distillation from their storage vessels. After the reaction, the p-xylene and D2O are separated from the catalysts by distillation; the top layer of p-xylene is dehydrated with CaCl2 and distilled, and analyzed by using an infrared spectrophotometer. Ni can exchange catalytically only H atoms of methyl groups of p-xylene with D2O irrespective of the method of preparation while Pt and Pd can exchange H atoms of both methyl groups and benzene ring. The catalytic activity of Ni is similar to Pt and Pd if supported on Al2O3 and unchanged if supported on silica or kieselguhr.

=> logoff hold

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SINCE FILE

TOTAL

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SESSION

FULL ESTIMATED COST

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73.54

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SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

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-8.03

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LOGINID:SSSPTA1623PAZ

PASSWORD:

\* \* \* \* \* RECONNECTED TO STN INTERNATIONAL \* \* \* \* \*

SESSION RESUMED IN FILE 'CAPLUS' AT 11:08:28 ON 01 DEC 2005

FILE 'CAPLUS' ENTERED AT 11:08:28 ON 01 DEC 2005

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COST IN U.S. DOLLARS

SINCE FILE

TOTAL

FULL ESTIMATED COST	ENTRY 73.33	SESSION 73.54
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-8.03	-8.03

=> hirota/Au  
L21 3 HIROTA/AU

=> d l21 1-3 ti

L21 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Substrate heating method, baseplate cooling method, and those devices.  
[Machine Translation].

L21 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Hemoglobinuric fever, cured by neosalvarsan

L21 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Hemoglobinuric fever, cured by neosalvarsan

=> logoff hold		
COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	77.08	77.29
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-8.03	-8.03

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STN INTERNATIONAL SESSION SUSPENDED AT 11:09:41 ON 01 DEC 2005

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Welcome to STN International! Enter x:x

LOGINID:SSSPTA1623PAZ

PASSWORD:  
TERMINAL (ENTER 1, 2, 3, OR ?):2

\* \* \* \* \* Welcome to STN International \* \* \* \* \*

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NEWS 10 OCT 27	EPFULL enhanced with additional content
NEWS 11 NOV 14	CA/CAPplus - Expanded coverage of German academic research
NEWS 12 NOV 30	REGISTRY/ZREGISTRY on STN(R) enhanced with experimental

spectral property data

NEWS EXPRESS NOVEMBER 18 CURRENT VERSION FOR WINDOWS IS V8.01,  
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
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=> off hold

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ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

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